

WELLINGTON CORDON PROJECT

INTRODUCTION

This project falls under the Flagship 3: Wellington Coordinated Project. It supports other projects within FP3 to create a holistic understanding of risks posed by collapsed buildings due to future earthquake/s and the secondary consequences of cordoning in the short, mid and long term.

Cordoning of the Christchurch CBD for more than two years and its subsequent implications on people and businesses had a significant impact on the recovery of Christchurch. Learning from this and experiences from the Kaikōura earthquake (where cordons were also established around selected buildings, Figure 3) have highlighted the need to understand the effects of cordons and plan for it before an earthquake occurs.

OBJECTIVES

To create a systematic understanding of cordons and to generate new knowledge to support planning and management of cordons to reduce adverse impact on the Wellington CBD (Figure 2, 4) and encourage resilience of the city.

The main research question revolves around an effective cordon planning and management framework. This will assist relevant stakeholders to make informed decisions if and when a cordon needs to be established. To achieve this objective, we aim to:

- Investigate key lessons learned from recent earthquakes in New Zealand (Christchurch and Kaikōura cordon experiences) to enhance future urban cordon management in Wellington
- Develop a set of earthquake scenarios and use participatory methods with key stakeholders to co-create maps of cordon extents for Wellington CBD
- Generate a time-series analysis of a potential Wellington CBD cordon, and the social and economic implications of cordoning in the wider city context
- Develop strategies to enable elasticity/flexibility in cordon management (specifically in relation to traffic management)

CONTEXT

Wellington city is a high seismic risk area. The Wellington Fault runs directly under the urban area of the city. The Hikurangi subduction zone, Alpine Fault and Wairarapa Fault could also directly impact Wellington. The city is partially built on reclaimed land and is surrounded by hills and the ocean, Figure 1. These geographic features creates additional challenges for disaster response.

Wellington is the second most populated city in New Zealand and a growing number of people reside in the urban area. Approximately 62,000 people (total population 416,700) work in the CBD, which highlights the impact of a major earthquake and potential cordons around the CBD. Furthermore there are many high rise buildings within the CBD which will influence the spatial extent of potential cordons. The duration of CBD cordoning will have a major influence on the recovery of the city after an earthquake.

CHALLENGES

- Dearth of academic literature related to cordons after earthquakes and its associated implications.
- Limited international examples of urban cordoning after earthquakes around the world
- Wide scope of inter-related impacts of cordons on economic, social, legal and institutional systems
- Contextual complexities of cordoning Wellington CBD such as geography, risk of tsunami, major road network passing through the CBD (lack of redundant road networks), high population density and businesses concentrated in and around the CBD etc.

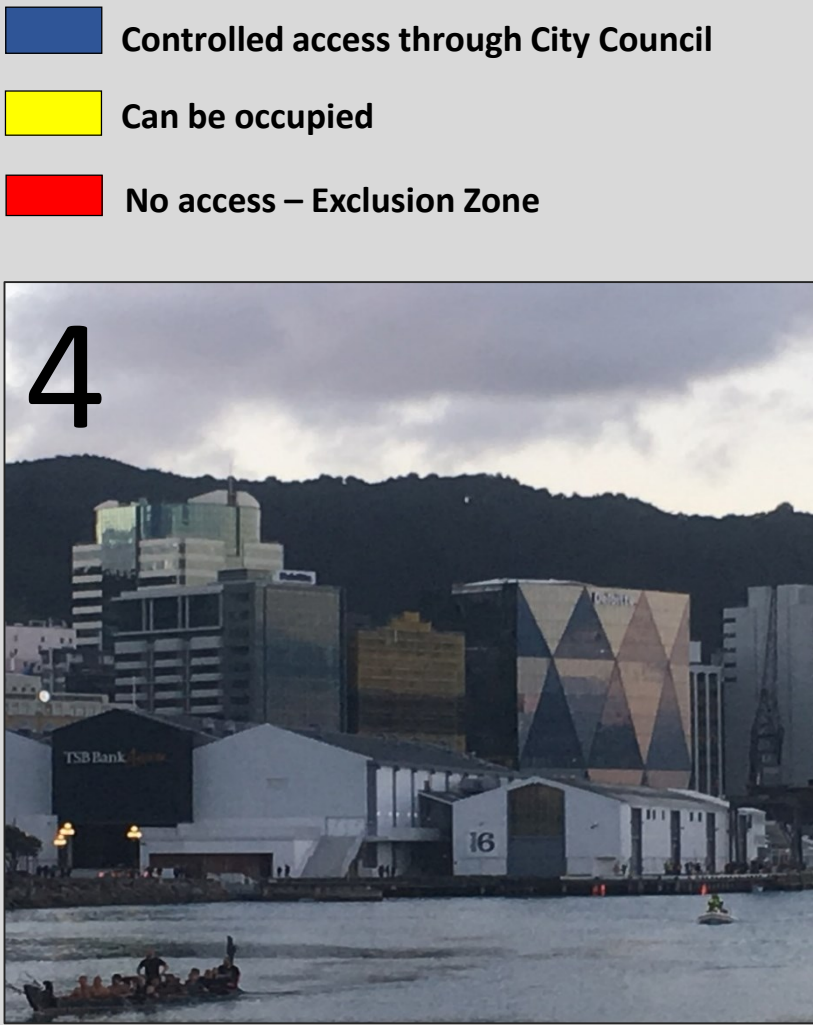
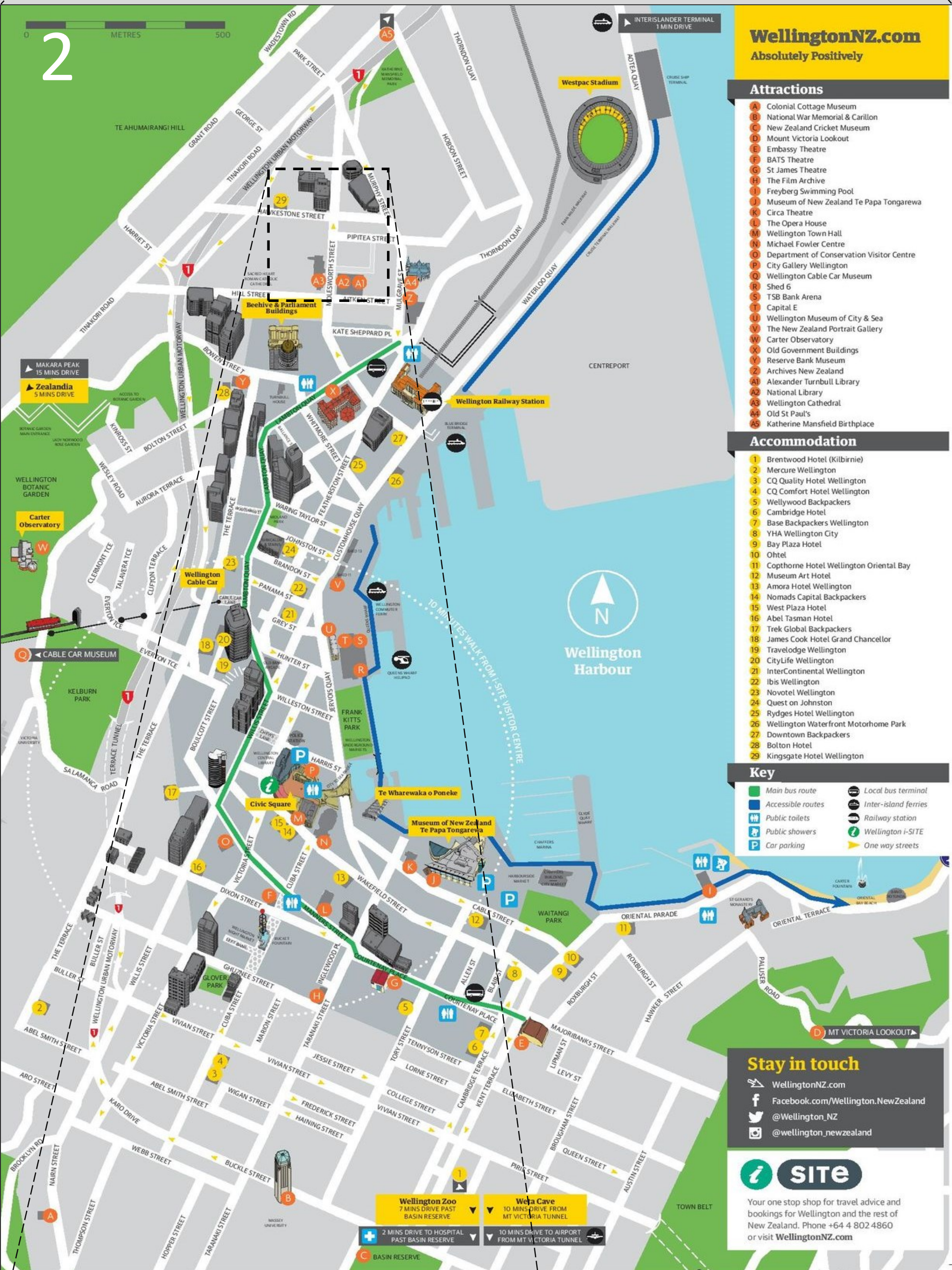
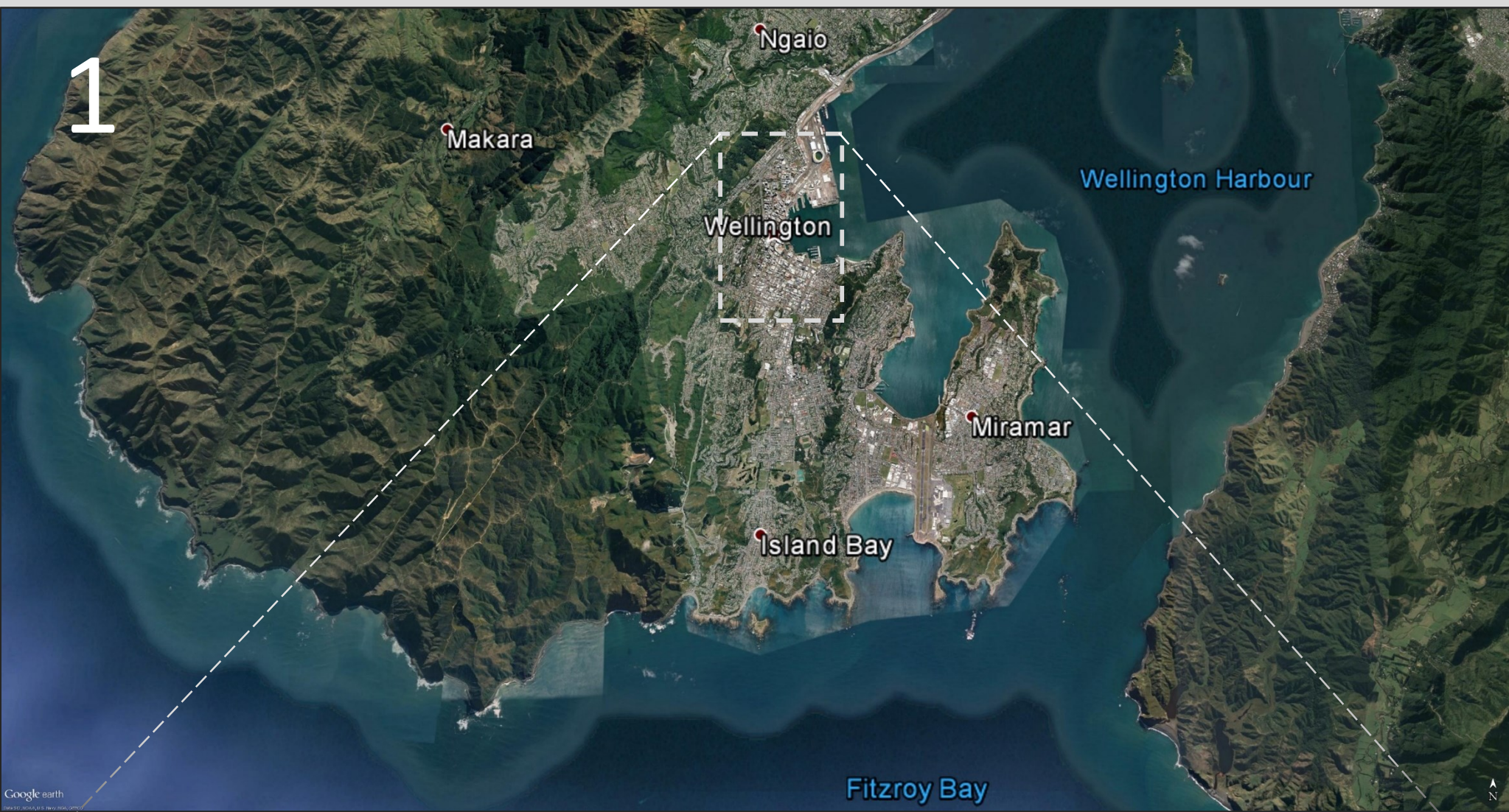


Figure 1: Wellington area, source: Google earth
Figure 2: Wellington CBD, source: <http://cruiseportwiki.com/Wellington>
Figure 3: Cordon placed around a building in Wellington CBD after Kaikoura earthquake source: <https://www.nzherald.co.nz/nz/news/article.cfm?id=1&objectid=11749721> (edited)
Figure 4: High-rise buildings in the Wellington CBD area overlooking the waterfront